

# POLAR BEARS INTERNATIONAL®



CONSERVATION THROUGH RESEARCH AND EDUCATION

## Chukchi and Southern Beaufort Sea Polar Bears



PHOTO © DANIEL J. COX/NATURALEXPONURES.COM

*Polar bears are considered the canary in the coal mine in terms of climate change. Field studies that track changes in polar bear populations play a key role in policy decisions.*

Capture study efforts with polar bears are challenging, costly, and dangerous, but the knowledge gained provides us with an understanding of a population's health, movement patterns, and reproductive success—information that is increasingly critical in view of recent sea ice declines caused by global warming.

**"A recent, disturbing trend of seeing fewer young bears continued."**

Most field work with polar bears takes place in the spring, when weather conditions make flights possible and females emerge from their maternity dens with cubs. This spring, PBI assisted with two key capture projects: an ongoing study in the

Southern Beaufort Sea and a new study in the Chukchi Sea. Both of these studies will provide us with invaluable data on how polar bears are responding to sea ice changes in the Arctic.

### Southern Beaufort Sea

For the past 27 years, Dr. Steven C. Amstrup, who serves on PBI's Scientific Advisory Council, directed the Polar Bear Project for the U.S. Geological Survey (USGS). Now under the leadership of George Durner, the USGS team continues to conduct vital, expanding research on polar bear populations and habitat in Alaska's Southern Beaufort Sea. The team's data played a key role in the recent U.S. decision to list the polar bear as a threatened species.

Durner reports that the spring of 2009 was an unusual one in northern Alaska. In contrast to earlier years, the weather was

very cold during the first four weeks of field work, and the sea ice near shore was amazingly tight, with few open leads and few sightings of seals. "We didn't encounter many seal kills and didn't see many seals basking on the top of the ice," he says. "We saw some tracks and break-ins, but over a two-week period, we saw only one seal kill."

**"The study will answer such basic questions as what the bears are eating and how much time they are spending in the water."**

The ice composition changed abruptly, however, on April 20<sup>th</sup> when warming temperatures and strong winds altered the seascape and opened large leads and cracks. "It almost seemed that someone had thrown a switch, the change was so fast," Durner says.

The sudden changes in the sea ice brought ringed seals to the surface to bask in the relatively warm sunshine, and the USGS crew began observing a greater frequency of successful polar bear predation on seals.

Durner reports that the bears seemed more spread out this year and that a recent, disturbing trend of seeing fewer *young* bears continued. In terms of body condition, halfway through the field season, the team had not seen a single "class four" bear—that is, a bear on the fat side of a one-to-five body index scale.

"We usually see some class four bears, so that was different," Durner says. "So far, we have seen mostly class three bears—which is typical—a few class two bears, and one class one bear, which was severely emaciated. I don't want to overstate this, though—these

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## Primary Goals

- Conserve the world's polar bears through research and education.
- Serve as a central educational resource on polar bears worldwide.
- Promote teamwork and encourage constructive dialogue.
- Build an organization that is international in scope.
- Operate in a fiscally responsible fashion.

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## Polar Bears International

105 Morris Street, Suite 188  
Sebastopol, CA 95472  
PHONE & FAX (225) 923-3114  
E-MAIL [website@polarbearsinternational.org](mailto:website@polarbearsinternational.org)  
[www.polarbearsinternational.org](http://www.polarbearsinternational.org)  
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are simply observations. Only after careful analysis of the data will we be able to suggest what our observations may mean for polar bears in the Southern Beaufort Sea."

**"The knowledge gained will help officials with environmental planning."**

Three years ago, a USGS study reported clear signs of stress in the Southern Beaufort Sea population compared with 20 years ago, including a drop in the survival rate of cubs. The study also found that adult male polar bears in the population weighed less and had smaller skull sizes than those captured and measured two decades ago. This spring's field work will help scientists determine if that trend is continuing and allow them to refine projections.

## Chukchi Sea

In addition to continued work on the Southern Beaufort Sea, PBI also assisted with field work on the Chukchi Sea this year, a population shared with Russia. A new U.S.-Russia treaty provides for cooperative management of that population of polar bears. Research on the U.S. side resumed last year after 15 years with no data.

Karyn Rode of the U.S. Fish and Wildlife Service (FWS), a principal investigator on the Chukchi Sea study, says the study is important because little is known about the status and health of the Chukchi Sea bears, including reproductive rates, survival, or population size. A capture study will provide a window into what is happening with those bears and whether they are showing the same signs of stress as the Southern Beaufort Sea population. It will also answer such basic questions as what the bears are eating and how much time they are spending in the water. The knowledge gained will help officials with environmental planning, including mitigation of oil and gas activity.

Dr. Eric V. Regehr of the FWS, a principal investigator and this year's lead on field research, reports that the ice in the Chukchi Sea was very dynamic this spring, with numerous open leads. As a result, the bears were more spread out compared with those in the Southern Beaufort Sea. He also notes that, with a few exceptions, the polar bears in the Chukchi Sea appeared to be in good body condition. "Nearly half the bears observed have either been on seal kills or

had full bellies that indicate recent feeding," he says.

In addition, the team observed that a number of the male bears captured were large, including three over 1,200 pounds. "The generally good condition of bears is in apparent contrast to the Southern Beaufort Sea, where the USGS and Canadian biologists report seeing thinner bears," he says. Regehr adds that comparing the nutritional status of Chukchi and Beaufort bears should provide insight into the current status of the Chukchi population.

In terms of age composition, the scientists saw mostly single bears, but also one family group with two 2-year-olds, one family group with one 2-year-old, and one family group with one yearling. They did not see any family groups with new cubs—or even tracks indicating that they were there.

The original ending date for the Chukchi Sea operation was May 2<sup>nd</sup>, but the researchers hoped to extend the project for another three days. Spring rains, however, started breaking up the ice, making helicopter landings too dangerous.

Research on both populations of polar bears will continue next spring, adding vital information on how polar bears are faring in a warming Arctic.

## New Sea Ice Study

More and more polar bears are expected to start living on land as the annual extent of summer sea ice continues to decline. In 2008, the USGS and the University of Wyoming (UW) researchers developed a cooperative study to assess the relative benefits and/or impacts to those polar bears found on land versus those that use sea ice during the Arctic summer, with participation by the Marine Mammals Management of the FWS. Initial work during 2008 focused on polar bears that remained on land during summer months. In 2009, the study will examine the physiological effects on polar bears that choose to summer on the deep-water pack ice.

To facilitate that study, UW professors and students have started to place sensors on polar bears captured as part of the USGS project and to gather additional physiological data. The UW study will provide in-depth detail on bear metabolism, muscle strength, activity levels, and body temperature profiles, and may be invaluable in assessing how polar bears in Alaska will cope with climate change.



# Tree Planting for Climate Change



*Pat Murphy, center, of the Wisconsin Department of Natural Resources, Division of Forestry, hands out seedlings and PBI posters at an event at the Milwaukee County Zoo. "The program is a good example of how each of us can help," she says, "whether you plant a tree or make a donation to enable someone else to plant one."*

PBI has embarked on a major new tree-planting initiative in cooperation with the Wisconsin Department of Natural Resources that has the potential to remove millions of pounds of carbon dioxide from the atmosphere. The partnership came about thanks to the efforts of Pat Murphy, regional forestry staff supervisor with the Division of Forestry in Eau Claire, Wisconsin.

"It seemed a natural fit," Murphy says, "even though, on the surface, planting trees would seem to have little to do with polar bears."

## One Person Can Make a Difference

Murphy developed a passion and concern for polar bears after traveling to Churchill, Manitoba, to see them in their natural habitat. She came up with the idea of a tree-planting partnership after reading about the launch of PBI's Project Polar Bear Contest in our Winter 2008 Newsletter.

"I read about the competition for teens to reduce carbon emissions in their communities," she says. "One of the contest categories was a tree-planting initiative. Since I work with both the state nursery and the urban forestry programs, it occurred to me that there might be a way to connect these with PBI and global climate change."

Murphy contacted PBI to explore the idea. This led to a meeting including Murphy, Robert Buchanan (PBI's president), Gordy Christians (Hayward State Nursery manager) and Laura Wyatt (urban forestry communications specialist). Together they

discussed a reforestation partnership plan.

The tree-planting proposal was approved this spring at the agency level, thanks to Murphy's indefatigable efforts and the unflagging support of Paul DeLong, forestry division administrator.

"There is a lot of excitement about it," Murphy says. "The effort gives us a new way to share our tree-planting message in both rural and urban settings and to reach a broader audience. At the same time, we'll help advance an understanding of global warming impacts in the Arctic."

"At first people are puzzled about the connection between trees and polar bears," she adds, "but as we explain the concept, their eyes light up. Most end up making comments like, *Wow, this is really neat.*"



*PBI created two posters for the Division of Forestry to raise awareness that planting trees can help save polar bear habitat.*

**"At first people are puzzled about the connection between trees and polar bears, but as we explain the concept, their eyes light up."**

## Four-part Plan

The partnership will provide funding for tree-planting efforts and help spread the word that planting trees plays an important role in reducing carbon emissions. In Wisconsin, for example, an acre of forest that survives to maturity will offset the emissions of two typical families a year.

### The partnership covers four basic areas:

- A cost-sharing program to encourage private landowners in Wisconsin to reforest their lands. "This will lead to more carbon sequestration," says Murphy, "and will have a positive impact on global climate change."
- Tree-planting grants to local communities to help them increase their canopy coverage and reduce carbon emissions.
- An educational element for all ages, ranging from working with adult landowners to tree-planting at schools. In addition, a high school symposium will link students to PBI's live webcasts from the tundra during the fall polar bear migration. Murphy notes that reaching both future land stewards and existing landowners is vitally important.
- Marketing efforts to spread the message that trees planted in Wisconsin have global impacts with respect to climate change and polar bear conservation. The approach is expected to spark an interest in planting trees with a wider audience.

Buchanan says that the partnership will serve as a pilot program for other reforestation projects.

"Planting trees and conserving forests are important to the health of our planet," he says. "This relationship will help us in our efforts to save sea ice in the Arctic, as well as the polar bears that depend on it for survival."

# Project Polar Bear Winners

Polar Bears International recently honored four teams of students from across the U.S. and Canada for their conservation efforts. The teens competed in Project Polar Bear, a contest hosted by PBI with Frontiers North's Tundra Buggy® Adventure as the major sponsor. The contest challenged teens to find ways to reduce greenhouse gas emissions in their home communities. More than 30 teams took part in the competition.

The finalist teams and their adult leaders won a three-day trip to San Diego to attend PBI's Spring Awards Ceremony on April 24th at the San Diego Zoo. PBI announced the Best Overall and Second Place winners at the ceremony and also honored the other teams.

"Everyone who has encountered these teens from Project Polar Bear has been motivated to reduce their carbon emissions," says Kathy Myers, a PBI Advisory Council member and education specialist with the San Diego Zoo, who spearheaded the project for PBI. "Teens today are plugged into what is happening in the world around them and they want to be a part of changing the future. The contest gave them a way to focus their efforts and become involved."



## SECOND PLACE WINNER The Canuck Nanooks, Winnipeg, Canada



*The second place winners enjoyed a close encounter with Sea World San Diego's beluga whales as part of their prize. From left to right: Lynne Vickery (parent and sponsor), Rachel Vickery, Mike Price (Sea World trainer), Miranda Vickery, and Rebekah Vickery.*

Three energetic and creative sisters, Rebekah, Rachael and Miranda Vickery from the Winnipeg area, came up with 11 projects to reduce greenhouse gas emissions. One, called "More Sense for the Environment," focused on getting coins back into circulation to reduce the environmental impact of minting. Last fall, the team stayed busy rolling thousands of coins ... and then lugging over 800 pounds of them to the local bank. This year, the teens aimed even higher with coins drives in a number of schools. They divided the proceeds between PBI and funding for a new polar bear exhibit at the Assiniboine Park Zoo.

Another project that proved to be a huge success in the team's rural community was their "Moo-ve Over & Feel Baaa-d About Mowing" campaign. The teens helped neighbors realize that gas and electric mowers contribute to the build-up of carbon emissions—so why not use a goat instead? Team Nanook came up with the idea after observing their neighbor's sheep and goats munch through 20 feet of their mom's prized perennial flowers. Neighbors were so delighted to have four-legged gardeners do their mowing that the idea was adopted in two more municipalities.



## GRAND PRIZE WINNER Pledge for the Polar Bears, Louisville Zoo



*Brandie Farkas and Emily Goldstein, Grand Prize winners, with their Polar Cups.*

Brandie Farkas and Emily Goldstein of the winning team took on emissions in a big way, generating pledges to reduce carbon emissions by 16 million pounds a year—and counting! The students accomplished this by creating a website to educate and inspire people to make lifestyle changes to help solve the world-wide climate crisis.

On their website, visitors can learn about polar bears and climate change through quizzes, a photo gallery, and a journal. They will also find tips on conserving energy and a commitment

page where individuals can pledge to reduce their personal carbon footprint through simple lifestyle changes.

So far, more than 800 people and 15 businesses and organizations have signed the pledge. The county school system alone has pledged to save more than eight million pounds of carbon emissions a year by shutting down computers, monitors, and printers at night and on weekends. The Louisville Metro Government is doing its part as well, with a pledge to save more than three million pounds. Businesses ranging from a retail gift shop (1,600 pounds), an animal clinic (9,000 pounds), and, of course, the Louisville Zoo (213,000 pounds) have joined the effort as well.

To take the pledge yourself, visit their website at [www.louisvillezoo.org/project-polarbear](http://www.louisvillezoo.org/project-polarbear). As the teens emphasize, small changes from individuals can add up to make a huge difference.





### **FINALIST** **The Green Teens,** **Oregon Zoo**



*The Oregon teens designed “Don’t Be Idle” signs for installation at schools and inspired each school to raise funds for their signs.*

Emily Carlson, Jacob Shimkus, and Sierra Sweigert of Lake Oswego, Oregon, created a “Don’t Be Idle” campaign that encouraged parents in their local school district to turn off their cars while waiting to pick up their kids. The teens spread the message that each minute spent idling releases a pound of CO<sub>2</sub>—and that idling a car for more than 10 seconds is less efficient than turning it on and off again.

Since the kick off day, the teens have seen almost no cars idling in front of the schools. They calculate that the campaign will reduce carbon emissions by more than 71,000 pounds a year—and the concept is spreading.

Another campaign, dubbed the “Bright Idea,” provided community members with simple products that reduce electricity usage, including compact fluorescent bulbs, hot water heater blankets, and under-house insulators. The teens provided the products at cost and even offered to install them!

A final event was an Earth Event in which the teens invited former Secretary of State Bill Bradbury to give a presentation on global warming. The evening included organic hors d’oeuvres and the opportunity to buy compact fluorescent bulbs and other energy-efficient products. After the event, Mr. Bradbury commented that he thought the night was one of the best environmental events he had ever attended.



### **FINALIST** **The Polar Bear Revolution,** **Pittsburgh Zoo**



*The Pittsburgh teens created an Arctic diorama to motivate elementary students to reduce carbon emissions. The diorama included an igloo built from recycled milk jugs.*

Brendan McKelvy and Tony Pittavino of the Polar Bear Revolution visited elementary schools, senior citizen centers, high schools, neighborhood events, and clubs in their community to inform the public about the affect of global warming on polar bears and the need to reduce carbon emissions.

The teens developed a motto, “Power Down. It’s the Solution,” and chose the compact fluorescent light bulbs as their primary focus. They solicited light bulb donations from manufacturers and retailers and then distributed them to various groups. They even walked door to door in their neighborhoods, handing out a free light bulb to each household and helping families calculate their carbon footprint.

The team helped educate and inspire people as well. They staged community events, including a “Swim with the Polar Bears,” and motivated students—through talks, quizzes, and games like “Hit the Switch”—to do their part. One event, in which they built and donated an igloo from 200 recycled milk cartons, inspired an entire elementary school to “go green.”

## Contest Prizes

### Grand Prize

The “Pledge for the Polar Bears” team from the Louisville Zoo participated in a tour of the San Diego Zoo, including a behind the scenes stop at the Polar Bear Plunge. They were also awarded with \$300 (USD) per participant and a trip to Churchill, Manitoba, Canada, the polar bear capital of the world, to see polar bears in the wild. The Churchill trip is scheduled for October 2009 and was generously donated by Frontiers North’s Tundra Buggy® Adventure. The trip is for four people and has an approximate value of \$20,000.

### Second Place Prize

The “Canuck Nanooks” from the Winnipeg area enjoyed a Wild Arctic Encounter at Sea World San Diego, where they swam with beluga whales, and a tour of the San Diego Zoo, including a behind the scenes visit to the Polar Bear Plunge. Each team member also received a \$200 (USD) monetary award.

### Finalist Prize

The other two teams of finalists—the “Green Teens” team from the Portland Zoo and “Polar Bear Revolution” from the Pittsburgh Zoo—enjoyed a VIP tour of the San Diego Zoo, including a behind the scenes stop at Polar Bear Plunge. They also received admission to Sea World San Diego. Each team member received \$100, and a membership and prize package of PBI merchandise.

PBI received more than 30 entries from the United States and Canada. For more information about the 2008 Project Polar Bear finalists, or to read the team blogs about the projects and learn ways to reduce carbon emissions visit [www.polarbearsinternational.org/project-polar-bear-contest](http://www.polarbearsinternational.org/project-polar-bear-contest).

## You Can Do It Too!

Join Project Polar Bear 2009 online at [www.polarbearsinternational.org/project-polar-bear](http://www.polarbearsinternational.org/project-polar-bear).



*PBI wishes to thank Frontiers North’s Tundra Buggy® Adventure for sponsoring the contest.*



*B.J. Kirschoffer, PBI's director of field operations, spent seven weeks in northern Alaska studying polar bear maternal den sites.*

## A Tale of Two Cubs

**B**J. Kirschoffer spent nearly seven weeks in fiercely cold weather this spring as part of a PBI team studying polar bear maternity den sites on Alaska's North Slope. The research crew set up remote, battery-powered video cameras inside white boxes to record behavior at the sites without disturbing the mothers and cubs.

The goal of the study—which is led by Dr. Tom S. Smith of Brigham Young University (BYU), a member of PBI's Scientific Advisory Council—is to obtain data that will help set guidelines to protect denning polar bears from industrial disturbances. The research also provides a window into how polar bear families are affected by a warming Arctic.

On a personal level, the field work provided Kirschoffer with a first-hand view of the harsh realities polar bears face in their environment, as well as a heart-stopping moment when he came nose-to-nose with a denning mother bear.

### Breaking Free

Team members began their field work in early March after fine-tuning equipment and buying supplies in Anchorage. They then traveled to the North Slope, where they set up remote cameras at six known maternity den sites.

Female polar bear bears typically enter snow dens in November and give birth to their cubs soon afterwards. The families remain in the den until March or April. During that time period, the mother bears live off their fat reserves and don't eat or drink. After finally breaking free from the den in spring, families typically hang around for time periods ranging from several hours to a couple of weeks. The mothers then lead their cubs onto the sea ice, where they end their long fast by hunting seals.

### Family Footage

The video recordings from two cameras in particular highlight the difference between a successful polar bear family and one struggling to survive. The first, recorded at a den site on the Sag River, shows a healthy mother bear with a single, playful cub.

The footage shows the mother and her cub emerging from their den and actively exploring their environment. "You can see the mother bear stretching out and rolling around on the snow and the little cub jumping on top of her," says Kirschoffer. "It's so much fun to watch. They're both quite active and playful."

In contrast, a site on Pingok Island revealed a mother polar bear with three cubs huddled lethargically in their snow den. When the family finally left, the mother had to pick up each cub in her mouth to carry them outside.

"The cubs didn't move a lot on their own," Kirschoffer recalls. "They were smaller and a lot less active than the Sag River cub."

A few days later, Kirschoffer noticed a white, furry patch in the snow while looking at the Pingok Island den site through binoculars. The research team waited until the family left for the sea ice before investigating. It turned out to be the stiff, frozen body of one of the cubs.

"I think the cub was just too weak to survive," says Kirschoffer, "although we sent the body off for an autopsy to see what happened."

### Close Encounter

Shortly before wrapping up their spring field work, Kirschoffer and his colleague, M.S. candidate Rusty Robinson of BYU, drove a snow machine to what officials had reported as an abandoned snow den in order to take measurements. They followed all approved procedures for approaching an abandoned site, including driving close to the den in a snow machine, keeping the



*The survival rate of cubs is linked to the health of the mother. Sadly, this weak, underweight cub did not make it.*

vehicle close for a quick getaway, and digging a hole separate from the entrance to flush out whatever might be inside.

The two researchers took turns digging. Kirschoffer had just started on his second round with the shovel when he broke through the side of the den and a mother polar bear stuck her head up.

"Time moves very slowly in situations like that," says Kirschoffer. "I remember seeing the head and thinking, *Man, I know that shape and it's too close!*"

He shouted, "*Bear, bear, not even kidding!*" and sprinted for the snow machine. Luckily, as Smith later explained, mother bears are risk-averse in situations like that because if something were to happen to them, their cubs would die.

The encounter did not seem to affect the polar bear family. They remained in their den for two more days and then padded out onto the sea ice.



*PBI wishes to thank Canada Goose for generously providing our field scientists and crew members with its PBI Expedition Parkas. The parkas allowed the team to work comfortably in -40 and -50 degree weather for eight hours straight.*

To learn more about Dr. Tom Smith's maternity den project, see the Fall 2008 issue of our newsletter. To see footage of the two cub families, visit our website and Facebook page. Kirschoffer's journal entries from the project are on our website at, [www.polarbearsinternational.org/pbi-supported-research/dispatches/](http://www.polarbearsinternational.org/pbi-supported-research/dispatches/). Finally, Anderson Cooper of CNN features the study in a blog entry titled, "Polar Bear Man," <http://ac360.blogs.cnn.com/2009/04/22/polar-man/>.





From left to right: Robert Buchanan, PBI's president; Dr. Jane Goodall; Daniel J. Cox of Natural Exposures, a PBI Advisory Council member; and Julene Reed, an Apple Distinguished Educator and PBI Advisory Council member.

PBI recently led a workshop on polar bears and climate change at a Youth in Action Conference sponsored by Dr. Jane Goodall's Roots & Shoots organization. The event was so successful that PBI is now working with Roots & Shoots on developing an integrated educational program that will carry our message to even wider audience. Robert Buchanan, PBI's president, conducted the workshop, assisted by two PBI Advisory Council members, Julene Reed, an Apple Distinguished Educator, and photographer Daniel J. Cox of Natural Exposures, whose account of his experience begins below.

## Youth in Action Conference *Article and photographs by Daniel J. Cox*

There are few people on this earth who truly represent kindness, goodness and a sense of holiness. Fewer still are able to project that aura to the masses, inspiring others with a sense of wonder, respect, admiration and a desire to follow. Meeting the standards of a saint, or maybe an angel, is a tall task. I've heard people like Mother Teresa and the Dali Lama described in such a manner, but until last week I had never met such a person—aside from my mother, who represents many of those traits within her own family. That changed when I was fortunate to meet Dr. Jane Goodall at a recent workshop.

I had traveled to the beautiful city of Ottawa, Ontario, to work with my friends and colleagues, Robert Buchanan of PBI and my fellow PBI Advisory Council member, Julene Reed. PBI had volunteered to help Dr. Goodall's prosperous and growing conservation group, Roots & Shoots, by conducting a workshop at Algonquin College.



Dr. Jane Goodall's Roots and Shoots organization invited PBI to a conference in Ontario to help educate youth on polar bears and climate change.



At the workshop, Robert Buchanan, right, PBI's president, informed, inspired, and empowered young people.



Two of our Advisory Council members, Daniel J. Cox and Julene Reed, also took part, guiding students to discover what they can do as individuals to make a difference."

### Working Together

PBI's role at the conference consisted of a workshop for young people interested in how climate change will effect the Arctic and polar bears in particular. Since the main theme of the conference was water, it was important for us to connect the consequences of the world's dwindling water supply with the effects this will have on polar bears and other species, including humans. I talked to the kids about how essential ice is for polar bears and how life for this species will end without it. I compared the Arctic's melting ice pack with the disappearing glaciers in the Himalayas. I emphasized that this warming climate will not just affect polar bears, but millions and millions of humans as well. India's growing water shortage is directly related to the melting Arctic.

The morning began with lots of sobering news and negative information, but ended in the afternoon with a message of hope. Hope that with enough action on the part of today's youth, we can stop humanity's role in contributing to the global melt-down. Hope that we all have the capacity to change and

that change we must. It was inspiring to see so many young people concerned and determined, and I was proud to be a small part of that energy.



# A Day in the Life of a Field Biologist *by Mike Lockhart*

**Editor's Note:** Have you ever wondered what it is like to work with polar bears in the Arctic? The following report offers a window into the daily routines—and challenges—of a PBI field biologist working in one of the harshest environments on Earth.



PHOTOS ARE ALL © MIKE LOCKHART.

Halfway into the season, our daily routine starts with a moderate level of exhaustion and a glassy-eyed check of the weather outdoors. Around or before breakfast, biologists, the pilot, and the mechanic further scrutinize weather conditions and forecast to ensure that wind, temperature,

and visibility are adequate to undertake a capture mission. We also discuss the area to be covered and the specific objectives for the day.

Polar bear capture work can occur on shorelines or on near-shore ice. However, most bears are captured well out to sea on the frozen pack ice, in some cases 80 to 100 miles out! The capture crew typically consists of the pilot in the right front seat, a biologist/darter who sits immediately behind the pilot, and a biologist/data recorder/observer, who is stationed in the front left seat.

## White on White Challenge

Once over suitable habitat, the biologists and pilot actively hunt for polar bears and polar bear tracks. If weather conditions have been stable, or if there have been periods of strong winds, tracking can be very difficult. In stable, good weather, tracks persist for long periods of time. This means that tracks that *appear* fresh can actually be quite old and thus result in long, unfruitful searches. Following a fresh snowfall, tracking is comparatively easy and bears are often quickly found once a fresh track is encountered.

When tracking conditions are poor, searches primarily focus on areas of good habitat that include open leads in the ice or ice pressure ridges that may concentrate bear activity or movements. Polar bears are constantly on the move in search of seal prey, and areas of high seal activity are actively searched for polar bears.

After seven polar bear field seasons, it still amazes me how vast the pack ice habitat really is, and how widely dispersed polar bears can be. On difficult days, flights can take hours and cover hundreds of miles without detecting any polar bears or recent tracks. Conversely, on good days, encounters and captures are relatively frequent.

## Bear Sighting, Action!

Once a bear is found, the team makes a series of quick assessments. Is it safe to conduct a capture attempt, both for the bear and the crew? Bears cannot be darted if there is a chance they could reach open water after the tranquilizer takes effect. As a result, many capture efforts are aborted because of the proximity of open water and/or weak ice. The presence of other bears in the area also influences whether captures will be undertaken and how. The size of the bear is determined to gauge the amount of tranquilizer needed.



*Polar bear tracks can linger for days in the Arctic. Finding the bears is easier after a fresh snowfall.*

**"On a recent capture, I felt the ice pan we were on shudder, much like a small earthquake."**

Great care is taken to minimize stress on the bear. Under perfect conditions, a darting attempt is accomplished quickly and effectively so that the bear is drugged, goes down after only a couple of minutes, and is situated in an open area that facilitates a close landing and easy handling and processing.

It can certainly be challenging to dart a weaving and dodging bear running at full speed from the window of a moving helicopter. The pilot's level of skill and experience are most critical to capture success and overall bear and crew safety.



*Satellite collars now include sensors that detect how much time polar bears spend swimming—important data to know as the summer ice coverage continues to recede.*

## Up Close and Personal

Once a bear is successfully darted, the sampling and measuring begin. We first check the bear to see if he/she has ear tags and/or permanent tattoos, indicating prior capture and identification. For first-time captures, we assign a unique ear tag and tattoo number. Tattoos are applied on the upper lip. Ear tags may persist over the life of the bear, but males routinely lose ear tags through fights and interactions with other bears. Ear tags are white and are not obvious except under relatively close inspection. In the field, only dependent cubs accompanying their mother, and up to 2.5 years of age, can be accurately aged. For independent bears of unknown age, a small, vestigial premolar is removed from which age can be accurately determined by counting annual cementum rings formed at the root of the tooth.

Each bear undergoes standard measurement of skull width and length, total body





*Bears have to be rolled over a couple of times for different samples & measurements.*

length, straight-line body length, tail length, and girth measurements of the chest, neck at the shoulder, and neck at the skull axis. We use a portable tripod, nylon net, and engine hoist to get an accurate scale weight of each bear and keep ear-punch tissues for future genetics studies. We also take blood, fat, fecal, and hair samples as an overall health screen, for diet analysis, and to examine heavy metal and other contaminant loads. Finally, we conduct an electric impedance test to estimate the fat content in the bear's body.

We fit some adult female bears with sophisticated satellite radio-collar transmitters, which provide in-depth information on bear locations. In addition, activity sensors detect motion, salt-water sensors measure time spent in the water, and temperature sensors determine maternal den entry and exit. (Male bears are not radio-collared because there is no current technology available to ensure that collars can be retained. Their necks are too wide and the collars simply slide off.)

**"I'm mindful of the importance of this work and the somberness of what may be happening around me."**

Once all data are recorded and sampling procedures completed, we return the processing equipment to the helicopter and the helicopter departs. The duration of the drug effect on polar bears varies by bear size, drug dose, and induction effectiveness. In most cases, drugged bears display initial signs of waking up as we are leaving. To ensure that drugged bears remain safe, upon departure, the crew flies concentric circles around each captured bear for up to a half mile to check for the presence of other bears. Should an additional bear be encountered and judged to be a potential threat, that bear would also be darted, processed, and dosed sufficiently to awake after the processed bear is mobile.

## Snapshot of the Population

The capture of each individual bear provides a unique snapshot into the overall condition of the population. Data are examined collectively and over time to compare key information on sex/age structure, the number of "marked" (previously captured) versus newly captured bears, and general changes in body condition and other biological indicators. Such data provide the strongest, most definitive information possible on the long term status and trends of polar bear populations.



*A bearded seal with her newborn pup keeps an eye out for polar bears.*

The return back to camp does not mark the end of the day. Flights can last until twilight hours. After getting something to eat, project staff must thoroughly clean all of the equipment used to tag and sample bears. They must also dry out wet equipment, replace used supplies, download field and capture data, prepare more darts, and mix more drug, as needed. Work days can become quite long and often continue into the early morning hours, resulting in moderate exhaustion at the beginning of yet another day of polar bear capture.

## The Scientist's Reward

Polar bear research is challenging, and can be tedious and cold. But it is also highly rewarding. It is a tremendous thrill to see each and every free-ranging polar bear in its natural habitat and to see a host of other Arctic wildlife while working in northern Alaska.

Tracking bears can be especially exciting. You get a glimpse into the life of a polar bear as you follow their movements over ice, their swims across or down small ocean leads, and their "break-ins" to under-snow lairs of seals.

Tracks can continue for many, many miles and polar bears often follow a pretty direct course over huge distances. We sometimes follow tracks for miles only to have them suddenly disappear on hard ice pans or at water's edge. But the successful tracking to

a distant running bear is a particularly rewarding experience.

## Dramatic—and Dangerous—Scenery

The ice/seascapes on the frozen oceans are magical, and the dynamic forces that shape and move large ice pans, open leads, and grind enormous ice blocks into tall pressure ridges and other unique formations are incredible. Large blocks of ice roll off the top of the ridge as the ice is forced upward.

A few times we have seen ice pushed upward into formations resembling small mountains. Processing bears on pans that are close to such active pressure ridges is both an exciting and humbling experience. On a recent capture, I felt the ice pan we were on shudder, much like a small earthquake. Soon afterward, there was a deep and prolonged roar of grinding ice just over a pressure ridge and out of our sight.

My presence here in the Arctic is never taken for granted. But, I'm also mindful of the importance of this work and the somberness of what may be happening around me. It would be a terrible realization indeed to think that I may be one of those directly witnessing the potential demise of one of our most magnificent carnivores; and that my children, or theirs, may not be able to share similar experiences in the future. The essential work of USGS, FWS, conservation organizations, and others around the world in behalf of polar bears and Arctic protection must continue and even greater public awareness and action toward conservation of these bears, and their habitats, is urgently needed.



Biologist Mike Lockhart of Laramie, Wyoming, spent the spring field season working for PBI through a U.S. Geological Survey (USGS) contract to support spring capture work in the Southern Beaufort and Chukchi Seas. Additional photos and a longer version of this article can be found on our website at <http://www.polarbearsinternational.org/pbi-supported-research/field-biologist/>.



# PBI's Arctic Ambassador Centers



PHOTO © DIK & VAL BECK.

*PBI's Arctic Ambassador Centers are helping the public make the connection between shrinking Arctic ice and the need to reduce carbon emissions.*

More than 40 zoos are helping to spread the word about polar bears and climate change in their local communities through PBI's Arctic Ambassador Center program, which is part of an alliance with the San Diego Zoo. The centers focus on education, research, and animal well-being issues. They also participate in PBI programs including our fall Leadership Camp, Project Polar Bear Contest, and live Tundra Connections Classrooms.

"The scientists who serve on our Advisory Council emphasize that education is the fundamental solution to saving polar bear habitat," says Robert Buchanan, PBI's president. "Reducing greenhouse gases is the key."

## Participating zoos are doing their part by focusing on four areas:

- Reforestation through community tree-planting projects
- Encouraging consumers to buy products made from recycled materials
- Reducing carbon emissions by saving energy and inspiring others to do the same
- Encouraging new technology

"All of the centers are well aware that greenhouse gases have climbed to 385 parts per million in the atmosphere," says Buchanan. "The build-up has been growing by two parts per million *per year* for the past decade. This is the highest concentration we've seen in the last 20 million years. Most scientists believe that the tipping point is about 400 parts per million. If that happens,

it will take the Arctic thousands of years to recover. This is why it's imperative that we reverse the trend soon."



PHOTO COURTESY OF SEA WORLD AUSTRALIA.

*Sea World Gold Coast Australia collected and recycled soft drink cans, resulting in a \$10,000 donation for PBI's educational programs.*

## Research and Education

In addition to educating the public, Arctic Ambassador Center zoos are participating in vital research projects impossible to conduct with wild polar bears. These include a hearing study and an olfactory study, both of which will help protect wild bears from industrial disturbances. In addition, member zoos are playing an active role in our Sustainability Alliance and help support PBI's field research including population studies and a maternal den study. Finally, they are helping to establish standards of excellence in animal husbandry, keeper guidelines, and exhibit designs.

"Our Arctic Ambassador Center zoos are doing a tremendous job with community outreach and changing mindsets," says Buchanan. "They're helping to inspire the greatest generation of conservationists the world has ever seen."

## Community Leaders

PBI's Arctic Ambassador Centers are taking a leadership role in informing, inspiring, and empowering people to reduce carbon emissions. Here are a just a few examples of what they are accomplishing:

- The Indianapolis Zoo has launched a major carbon reduction initiative on its website.
- The Louisville Zoo sponsored the winners in our Project Polar Bear Contest, two teens who reduced carbon emissions in their home communities by 16 million pounds a year.
- The Toledo Zoo has "gone green" to reduce its carbon footprint, utilizing wind power, thermo power, solar power, solar lighting, and sinks that generate their own operating power. They are also launching a new children's exhibit that focuses on learning about conservation ethics through play.
- The Philadelphia Zoo has launched a comprehensive initiative called "Footprints" designed to offer climate change solutions. The initiative encompasses everything from carbon offset projects to on-site green practices and participation in tree-planting campaigns.
- The Oregon Zoo served as the first host for PBI's conferencing classrooms—then in its pilot phase—and provides leadership for our Sustainability Alliance.
- The Columbus Zoo and the Toronto Zoo are building state-of-the-art exhibits designed to inspire and motivate the public.
- SeaWorld Gold Coast Australia collected cans at recycling bins throughout the facility, raising \$10,000 for PBI's educational programs.
- SeaWorld San Diego continues to actively support our research efforts, Sustainability Alliance, and Project Polar Bear.
- The San Diego Zoo provides leadership with the Arctic Ambassador Centers as well as our Sustainability Alliance and initiatives including Leadership Camp and Project Polar Bear.





## PBI Reaches out in Norway

*PBI was invited to join delegates from the five polar bear nations at a recent meeting in the Norwegian fishing village of Tromsø. The group discussed ways to meet the challenges ahead as global warming continues to affect the polar bear's habitat.*

Snow swirled in the northern fishing village of Tromsø, Norway, as PBI took part in the Range States Meeting of the five polar bear nations—Canada, Denmark/Greenland, Norway, Russia, and the United States—March 17th-19th, 2009. The gathering marked the first time that a limited number of outside observers were invited to attend.

The five nations originally met in 1973 to forge an agreement to save the polar bear from severe over-hunting, which had pushed the species to the brink of extinction. By the early 1980s, hunting restrictions allowed populations to rebound. In Tromsø, however, participants agreed that today's polar bears face a much graver threat: the loss of their sea ice habitat due to rapid climate warming.



*At the meeting, PBI was invited to give a presentation on our Sustainability Alliance. Alliance members have developed a set of contingency plans to help polar bears in a warming Arctic.*

### Meeting Outcome

The first day of the meeting was dedicated to reports from each member nation on the status of polar bears within their borders. The country reports included updates on research initiatives and harvest allocations. It also included a presentation by Dr. Andrew Derocher, chair of the IUCN Polar Bear Specialist Group and a member of PBI's Scientific Advisory Council. In his talk, Derocher emphasized the need to take action on climate change.

Four additional PBI Scientific Advisory Council members also took part in the discussions: Dr. Steve Amstrup, Dr. Nick Lunn,

Dr. Ian Stirling, and Geoff York.

The range states met to craft their outcome document on the second day. On the final day of the meeting, delegates presented and approved the document. The day concluded with presentations by the two conservation groups selected to take part, PBI and WWF.

### PBI's Polar Networking

Amy Cutting, co-chair of PBI's Sustainability Alliance, gave a brief address that was warmly received by delegates. In her talk, she emphasized PBI's desire to work with all parties in forging effective strategies to help conserve polar bears in the face of global climate change.

"It was an opportunity to explain that we're not telling anyone what to do, that we're here to offer support and help," she says.

Cutting says that the chance to have one-on-one conversations with delegates from each nation was equally productive. The exchanges helped her understand the needs of the parties involved and how PBI can help.

"I learned so much about the nuances of each nation's management system and the complexities of working with shared populations of polar bears," she says. "There was a lot of interest in working with us. I think we made traction on two issues in particular: human-bear interactions and contingency planning."

### Human-Polar Bear Interactions

The five polar bear nations all recognize that human-polar bear encounters will increase as the sea ice melts and the bears are driven ashore. Indeed, this is already happening in some coastal villages. Cutting found keen interest among wildlife managers in sharing information on polar bear detection and deterrence. She also learned that those northern communities that already experience polar bear encounters take different approaches depending on resources and cultural norms.

For example, Manitoba, Canada—home to Churchill, "The Polar Bear Capital of the World"—has the funding and public support to immobilize, detain, and transport problem bears out of town and back onto the ice. In contrast, communities with limited resources fund low-tech options like snowmobile patrols and flaming torches.

Some of these programs—like snowmobile patrols in Russia—help reduce poaching because they provide local people with an alternate way to earn money. This underscores the importance of hiring within a community to achieve conservation success.

Forward action on this issue includes attending a meeting this fall in Canada that will focus on human-bear conflicts and how to manage them.

"People are doing incredible work protecting bears and people in communities all around the Arctic," Cutting says. "By bringing these folks together to share best practices, we feel that they can be even more successful with existing programs and will also be able to develop new ones."

### Contingency Plans

Cutting says that the other subject that came up again and again at the meeting was contingency planning. The range states recognize that they will not be able to solve the climate crisis on their own, but they *can* make plans for helping affected bears.

"As Andy [Derocher] points out, polar bear numbers will go down as the climate continues to warm, but the animals won't just blink out of existence," Cutting says. "We'll be seeing starving bears, orphaned cubs, injured bears, and possibly oiled bears. The fact is that there will be real consequences for individual bears and all parties will need to work together to mount an effective response."

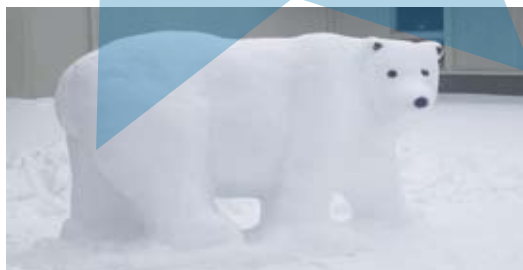
PBI's Sustainability Alliance is already working with the U.S Fish and Wildlife Service (FWS), other nonprofits, and industry representatives on drafting a set of contingency plans to address various scenarios. The FWS is convening a meeting this summer to bring these groups together to find ways to collaborate.

"If we can develop a strong collaborative model that works for Alaska, the elements could then be carried to other countries to help them with their own contingency-planning efforts," Cutting says.

The bottom line, she adds, is that the circumpolar nations clearly care about polar bears and their Arctic habitat and want to work together to preserve the species.

# Young Conservation Heroes

## A DIORAMA FOR POLAR BEARS



Breanna Seddon, a graduate of PBI's Leadership Camp, returned to her Winnipeg high school, Windsor Park Collegiate, determined to make a difference. She and some fellow students came up with a way to raise money for PBI while also educating their peers about the plight of polar bears and the need to reduce carbon emissions.

The teens decided to spread the message that the use of plastic bags contributes to the build-up of greenhouse gas emissions. To encourage the use of reusable bags, they asked the school's art department to design an emblem for a cloth bag featuring a mother and cub. They then bought the cloth and sewed over 75 bags that they sold during the school's lunch hour.

To further raise awareness, the students created a life-size diorama in a school courtyard that featured a snow sculpture of a polar bear and an inukshuk. They later added a seal made from black plastic garbage bags. The diorama has since melted away, but the teens remained committed to helping polar bears.

## BENEFIT TALENT SHOW



to reach their food source, causing more and more of them to drown or starve to death. The student decided to help the bears with a lemonade stand, which raised about \$50. But Michelle, who loves to sing, dance, and act, wanted to do more—and so she did what comes naturally: She organized a benefit talent show.

The event was so successful that Michelle plans to organize one every year—all part of her efforts to help the bears.

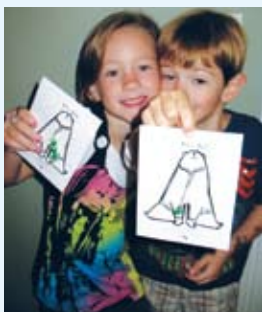
## JENNIFER MULLIKIN'S THIRD GRADE CLASS



*Jennifer Mullikin's third-grade class at Gold River School in Gold River, California.*

Hello! My third-grade class studied global warming and the effects it is having on polar bears. We completed our study by presenting PowerPoint slide shows to all 650+ students at our school. We followed these presentations with a fundraising effort. My class chose your organization as the recipient of all the money we earned by selling T-shirts, bookmarks, and hand-made clay bears. We raised over \$700 to help PBI with its mission! Thank you for the wonderful work you are doing for the polar bears.

## POLAR PULLS



raising money to help polar bears. They also learned to count by fives!

Caitlin Brennan, Declan Brennan, and Eleanor Peter created some "Polar Pulls" to help polar bears. The elementary students organized a boutique show and sold over 40 pulls. During the show, they were excited to explain their reasons for

Nine-year-old Michelle Bergh of Stillwater, Minnesota, raised more than \$3,000 for PBI by organizing a talent show involving 25 children. The kids entertained the audience with singing, guitar playing, a Chinese flag dance, and even a karate routine. In addition, Michelle delivered two short speeches that included facts about polar bears, their melting habitat, and tips for going green.

Michelle's motivation began when she learned that polar bears face extinction due to global warming. She worried about the fact that polar bears now have to swim farther



## POLAR BEAR BIRTHDAY PARTY

Emma Christ, a student at Sellwood Middle School in Portland, Oregon, celebrated her 12th birthday by asking her friends to make a donation to PBI in lieu of gifts. Emma has long loved polar bears. One of her earliest exposures to them was through the children's book, *A Polar Bear Journey*, written by her cousin, Debbie Miller. Emma especially admires how protective mother polar bears are of their young, and is concerned about the impact of global warming on polar bear habitat.

Last Christmas, Emma received her number-one gift of becoming a "Zoo Parent" to the polar bears at the Oregon Zoo. She took a behind-the-scenes tour to see the zoo's three polar bears and was fascinated by how the zookeepers fed them. Emma hopes to volunteer helping animals in the future.

## POLAR BEAR YARD SALE



Dear PBI,

My sisters—Maddy, Katie, and I (Hayley)—are happy to report that our mommy put a check into the mail today for \$562. Our Polar Bear Yard Sale went really, really great and we had lots of people come by in order to help polar bears. All of us donated things that we could sell, and we could not have been happier with the money we raised. Daddy said that Maddy and I did a good job helping people because as soon as a car pulled up we would yell, "May we help you find something?"

In addition to what we earned at the yard sale, our mommy also added the money I saved from my allowance plus other money donated by friends. I hope that you're happy with what we were able to pitch in. Once again, thank you for the chance to help and thanks for all you do to help polar bears!

*Hayley, Maddy & Katie Reagan*



## PBI Expedition Parka!



Canada Goose, the world's premier cold-weather clothier, will launch a special edition PBI Expedition Parka just like those keeping PBI's science advisors mellow and warm in the frigid Arctic wind. If you need a quality parka with fleece-lined pockets and goose down insulation, wait for this one coming in October. Naturally PBI will be carrying them.



Coming Soon!



**PJ5·Munki-Munki PJs**  
Cute, cute. These sweet pajama sets include a long-sleeve, 50% cotton/50% modal top paired with 100% cotton flannel pants. Soft blue, scooped-neck tops feature an appliqued mother and cub. Elastic waist pants feature playful polar bear families and Arctic foxes, drawstrings, and plaid bottom cuffs.

Munki-Munki donates 5% of every sale to PBI. Available in adult women's sizes S(6-8), M(10-12), Large(14), and XL(16). **\$60.00**

## JEWELRY



**NEW·J57·Northern Lights Polar Bear Pendant**  
Northern lights frame a silvery polar bear on these unusual fused glass pendants, handmade in Mexico. A Fair Trade Product, 7/8" wide x 1.5" tall, including silver loop. **\$24.95**

**NEW·J58·Northern Lights Polar Bear Earrings**

Pretty companion pieces to our fused glass pendants, handmade in Mexico. A Fair Trade Product, 5/8" wide x 1.5" tall. **\$19.95**



**J55·Sea Blue Polar Bear Necklace**

Both sky and sea sparkle in this tribute to our favorite Arctic animal, handmade by Ecuadorian artists from recycled glass. Pendant measures 1 5/8" x 1 5/8". **\$19.95**

**J56·Polar Bear Sunrise Necklace**

The glow of an Arctic sunrise frames this lovely polar bear, handmade by Ecuadorian artists from recycled glass. Pendant measures 1 5/8" x 1 5/8". **\$19.95**



**C31·PBI Patch**

Show the world that you're a proud supporter of PBI by adding our handsome embroidered patch to your jacket or duffel bag. 3" long x 2" tall. **\$4.95**



**NEW·BX1·Pretty in Pink Boxers**

Our soft flannel boxers in a trendy pink plaid feature a polar bear and the slogan, "Polar Bears International" on the left leg. 100% cotton in women's sizes S-2X. **\$18.95**



**NEW·BX2·Black Watch Boxers**

Our soft flannel boxers in the famous Black Watch plaid feature a polar bear and the slogan, "Polar Bears International" on the left leg. Unisex in sizes S-XXL. **\$18.95**



**NEW·PJ6·Pretty in Pink Flannel Pants**

Our soft flannel pants in a trendy pink plaid feature a polar bear and the slogan, "Polar Bears International" on the left leg. Available in women's sizes S-XXL. **\$29.95**



**NEW·PJ7·Black Watch Flannel Pants**

Our soft flannel pants in the famous Black Watch plaid feature a polar bear and the slogan, "Polar Bears International" on the left leg. Unisex in sizes S-XXL. **\$29.95**

**NEW·T28·Save Our Ice T-shirt**

Show your commitment to saving Arctic habitat with PBI's "Save Our Ice" T-shirts. The perfect match for our Black Watch boxers and pants. Bay green, 100% cotton. Available in S-XXL. S-XL, **\$19.95**, XXL, **\$20.95**



**NEW·T29·Lapis Polar Bear T-shirt**

A polar bear family peers out of a silver foil frame on a luxuriously soft, textured lapis background. 100% cotton, scooped neck, in women's sizes S-3X. S-XL, **\$22.95** 2X-3X, **\$24.95**



**NEW·T30·Peppermint Polar Bear T-shirt**

A polar bear family peers out of a gold foil frame on a luxuriously soft, textured peppermint pink background. 100% cotton, scooped neck, in women's sizes S-3X. S-XL, **\$22.95** 2X-3X, **\$24.95**

**T25·PBI Weathered Loyalty T-shirt**

Show your support of Polar Bears International with our custom, garment-dyed T-shirts featuring a handsome polar bear on a luxuriously soft, deep-denim textured background. S-XL **\$19.95**, XXL **\$21.95**



#### C46 • **Polar Fun Note Card Set**

Our boxed note card sets contain 20 distinctive polar bear note cards (blank inside, five of each design) and 20 envelopes. Printed on recycled paper and packaged in a keepsake box with a magnetic lid. Box measures 4.25" x 5.75" x 1.5". Cards measure 4" x 5". **\$13.95**



#### V13 • **Polar Bears in Time DVD**

By Daniel Zatz with music by Matthew Felton and a bonus song by Tom Rugg. This graceful, patient, and beautiful view of the polar bear shows adult and cub bears in their daily lives. Photographed by four-time Emmy Award winner Daniel Zatz. Subtitles in English set the scene and provide factual information. The DVD also includes scientist interviews on the polar bear's overall status. Main running time, 40 minutes. **\$14.95**



#### PB2 & PB3 • **Polar Bottles "Take the Bear Everywhere"**

Every day in the U.S. alone, people throw away over 40 million plastic water bottles. Our Polar Bottles provide a fun & fashionable alternative. Their insulating foil liners keep cold liquids *cold*, plus they are *safe* (with no BPA) and *recyclable* when they finally wear out. Dishwasher safe, with removable carrying strap. Choose 20 oz., PB2, **\$10.95**, or 24 oz., PB3, **\$11.95**

#### W9 • **"Save Our Ice" Reusable Bag**

Each year, an estimated 500 billion to 1 trillion single-use plastic bags are consumed worldwide. Currently, 97% of these bags end up in a landfill or littering our planet's fragile eco-systems. PBI's reusable bags stuff down to fit in a purse or pocket, making it easy to say "no" to single-use bags. Each unfolds to a full-size shopping bag with a capacity of 25 lbs. Chic and easy to use, they're colorful, washable, ultra-compact, and eco-friendly. A great gift! **\$7.95**



#### M30 • **"Save Our Ice" Travel Mug**

Do your part to reduce waste in our landfills with our reusable acrylic curvy-shape mugs. Each features the PBI logo and the slogan, "Save Our Ice." Cobalt blue, 16 oz., with double-walled stainless steel liner, chrome cap with spill prevention slide lock, and no slip grip bottom. **\$12.95**

#### C47 • **Mother & Cubs Pocket Pal**

Our compact pocket pals have a handy notepad tucked inside, making them easy to carry in a purse or pocket to jot down ideas or grocery store items. Fun for kids and useful for adults. Each has a photo cover with a magnetic closure. 3"x 4", printed on recycled paper. **\$3.95**



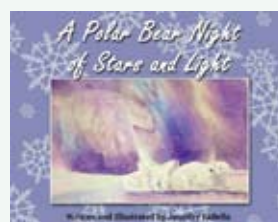
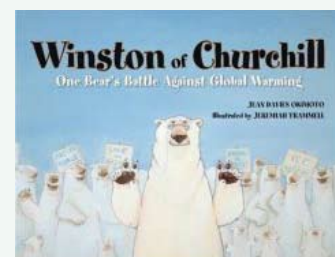
#### BC2 • **Replica Polar Bear Claw**

A great conversation piece. At 3 1/2", it could almost function as a letter-opener. **\$16.95**

## BOOKS

#### BK34 • **Winston of Churchill**

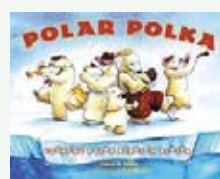
By Jean Davies Okimoto with illustrations by Jeremiah Trammel. In this funny and heart-warming book, Winston the polar bear rallies his fellow bears to convince humans to save their Arctic home. "Ice Is Nice!" they shout. An engaging and charming tale about a serious topic. Reading level, ages 4-8. Hardcover, 11.1" x 8.6", 32 pages, **\$16.95**



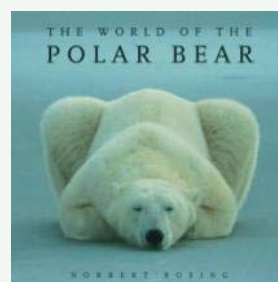
#### BK39 • **A Polar Bear Night of Stars and Light**

Written and illustrated by Jennifer LaBella. The enchanting story of two polar bear cubs who become separated from their mother on a snowy day. As they search for her, they meet other Arctic animals and later fall asleep under a night sky filled with stars and northern lights. A reassuring tale with lovely artwork. Hardcover, 32 pages, 11.1" x 8", signed by the author. Foreword by Robert Buchanan of PBI. **\$19.95**

#### BK37 • **Polar Polka: Counting Polar Bears in Alaska**



By Cherie Stihler. Playful words and a bouncing rhythm will engage even very young listeners in this delightful counting book, in which 10 polar bears with shaggy white fur play the polar polka on a bobbing iceberg. The last page contains a gentle message about global warming and how we can help. *Paperback*, 32 pages, 10.5" x 8.4", **\$10.95**

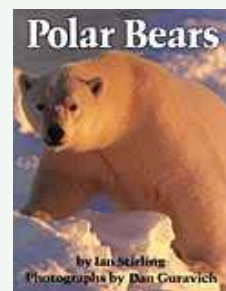


#### BK6 • **World of the Polar Bear**

Text and photographs by Norbert Rosing. This magnificent book by renowned nature photographer Norbert Rosing follows the polar bear through each season. With thorough and engaging text and spectacular photographs, it's the perfect gift for a polar bear lover. *Hardcover*, 175 color photographs, 11 1/2" x 11 1/2", **\$45.00**

#### BK14 • **Polar Bears**

By Dr. Ian Stirling. Written by Canada's foremost polar bear scientist, this book is the definitive work on the biology of the polar bear. It's a fascinating account of the polar bear's world, beautifully illustrated with photographs by Dan Guravich. *Softcover*, 220 pages, **\$29.95**





## THE KID KORNER



### NEW • PH3 • Cell Phone Charm

Add zip and style to your cell phone or handbag with our adorable polar bear dangle charms. Bear 5/8" long; with strap, 3" long. **\$2.95**



### TY60 • Hudson Bay Bear

Our soft, winsome cubs come straight from the Canadian North, ready for hugs in a polar-bear friendly home. Created by the Canadian Zoo & Aquarium Association, each sale benefits conservation programs for polar bears and other wildlife. 10" tall from head to tail; 9" wide. **\$18.95**



### TY63 • Churchill Bear

Soft and regal, our plush Churchill bears sit 15" tall. **\$29.95**

### TY64 • Jumbo Polar Bear

Our plump, cuddly polar bears measure an impressive 30" long.

With soft claws, a powerful nose, and gentle brown eyes, they're sure to become a favorite childhood friend. **\$49.95**



### TY52 • Mini Polar Bear Flashlight

Push a button on the back of one of these adorable little polar bears, and his mouth will open, lighting your way through the night. Super bright white LED light, 1.7" long, with beautiful rubberized, airbrushed finish. Fun for kids and handy for adults! **\$7.95**

### TY61 • Polar Play Puzzle

Our 100-piece puzzles provide a white-on-white challenge for kids, with a playful polar bear cub at center stage. An absorbing family activity for rainy days—or snowy nights. **\$10.95**



### TY50 • Polar Bear Hats

Our cozy faux-fur polar bear hats make bundling up fun! With their leatherette noses and friendly eyes, they're also perfect for school presentations and imaginative play. **\$12.95**



### TY65 • Polar Bear Face Mask

Perfect for school presentations, plays, or just plain fun! **\$6.95**

### TY53 • Polar Splash Pocket Pal

Our compact pocket pals have a handy notepad tucked inside, making them easy to tuck in a purse or pocket to jot down ideas, phone numbers, or grocery store items. Fun for kids and useful for adults. Each has a photo cover with magnetic closure. 3" x 4", **\$3.95**



### NEW • NL1 • Sea Blue Polar Bear Nightlight

Our sea blue polar bear nightlights cast a beautiful Arctic glow. Handmade by Ecuadoran artists from recycled glass. A Fair Trade Product. **\$19.95**



### NEW • NL2 • Polar Bear Sunrise Nightlight

Our polar bear sunrise nightlights cast a beautiful Arctic glow. Handmade by Ecuadoran artists from recycled glass. A Fair Trade Product. **\$19.95**

### TY20 • Stretchy Bear

These pleasingly soft and jiggly plastic bears were made to s-t-r-e-t-c-h and s-t-r-e-t-c-h. **\$1.95**



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SHIPPING AND HANDLING (SEE CHART)						
CONTRIBUTION - POLAR BEARS INT. - THANK YOU FOR YOUR HELP!						\$

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*Gifts from shop sales help underwrite  
PBI's administrative costs, freeing up  
donations for polar bear projects*

# Contributions through the First Quarter of 2009

Contributions of \$250 or more are listed for the entire year; donations in the \$100+ category are listed for one quarter.

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Including In-kind Contributions

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## Individual Donors

### Life Time Arctic Ambassador

Val & Dick Beck  
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### Churchill Bear \$10,000+

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Alvin John Jr. Huss

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Jerry & Rose Anderson  
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(In honor of Max Flatiron for  
collecting coins for the polar  
bears)

Tina Love  
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Susan Orlansky  
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(In honor of Liam Simmons  
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Bears Club)  
Steven and Marcy Toscher  
(In honor of the marriage of  
Thao & Sherman Ma)  
Ann Tretter  
Lisa Vogt

### Mother & Cubs \$100+

First quarter of 2009.  
Donations in the \$100+  
category are listed on a  
quarterly basis.  
Nannette Ames  
Maryann Baliff  
Mr. & Mrs. Lawrence Bellatti  
Carol Bergersen  
Kjell Bergh  
William E. Bettridge

Eleanor Boba

(In honor of Alida Humphrey)

Patricia Bonnett

Matthew Conway & Jennie  
Johannesen

Donna V. Cotnoir

(In honor of The Shade  
Children)

ER & Mary R. Dantzier III  
(In honor of Aaron Dagen's  
report card)

Susanna Davila & Dick Curtis  
Melissa DeJonckheere

Jean Delacretaz

Cassie Eaves

Catherine Edwards

Becky Elder

(In honor of Frederica  
Gamble)

Jon Felde

First Graders at Brown School

Roger & Linda Fornell

Barbara Frey

Rita Gomez

Daniel Greenberg

Phyllis & Bill Greenberg

A. Thomas Hallowell

Wendy Hannum

Dr. Daniel Hartnett

Meier Hildegard

Nancy Hobbs

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Amy M. Holze

(In honor of Virginia Holze)

Steve Hornick

James Hubbard

Jim Ivanoff

Douglas & Ruth Johnson

Kristen Jordan

Rene G. Kaerskov

Steve A. Kalin

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Sylvia Kaminska

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(In honor of Mrs. Kennedy's  
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Emily Klinger

Yan Kordiak

Ruth Kravovich

Marit & Orlyn Kringstad

(In honor of Michelle Bergh)

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Myi Miyazaki

Rodney H. Mulholland

(In honor of Michelle Bergh)

Susan & Natalie Murphy

Dorothy Murray

MVRMS Builders Club

John & Sharon Nicholas

(In honor of Kathy Myers, San  
Diego Zoo)

Mary T. O'Donnell

K. O'Hare

Jacqueline Oland

Ellysia Overton

Natasha Pavia

Terry Perkins

Peter J. King Family

Foundation

Polar Bear Alumni Association

Stephen Sallade

Linda Schoenthaler

(In honor of Frederica  
Gamble)

Esther Schuyt

William B. Shannon

Jeff Shapiro

Gerald Sharp

Harry Sieben Jr

Coral & Christopher Story

Stuart R. Manoff & Associates,  
PA

Paul Tautges

Dr. Ann Teske

Ian Thorleifson

Wilson & Sallie VanArsdale

David Vertuca

(In honor of Sharky Laguana)

Jerome & Melissa Walker

Patricia Walker

John Watson

Ruth Whitledge

Tom & Julie Wolthausen

(In honor of Tom Ocasek)

Zoological Society of New  
Jersey

# Help protect the great white bears

Contributors of  
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tion to our quar-  
terly newsletter.  
All contributions  
are tax deduct-  
ible to the extent  
allowed by the law.  
Donations of \$100  
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in our newsletter.

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## Polar Bears International

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## Memorial Contributions

### Permanent Memorial Tribute

Robert G. Dorsch  
Dan & Marcia Guravich

### Lord of the Arctic \$500+

Diana Fleischman  
(In memory of Brother Jeff)

### Arctic Circle \$250

Kenneth A. Chambers  
(In memory of Dan Guravich)  
Robert D. Wilson  
(In memory of Virginia L.  
Wilson)

### Mother & Cub \$100

First quarter of 2009.  
Donations in the \$100+  
category are listed on  
a quarterly basis.  
PLLC Caring Hands Animal  
Hospital  
(In memory of deceased pets  
belonging to our clients)  
Karen V Stefanini  
(In memory of Patrick J.  
Kelly)  
Shirley Walters  
(A birthday remembrance  
of Dannie)  
Marty Weissman  
(In memory of my father,  
Dan Guravich)

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